

REMARKS

I. Introduction

Claims 8 to 21 are pending in the present application. In view of the following remarks, it is respectfully submitted that all of the presently pending claims are allowable, and reconsideration is respectfully requested.

Applicants notes with appreciation the acknowledgment of the claim for foreign priority and the indication that all certified copies of the priority documents have been received.

Applicants thank the Examiner for considering the previously filed Information Disclosure Statement, PTO-1449 paper and cited references.

II. Objection to the Specification

The Office Action states that the Specification is objected to as (1) "the continuity chain" and (2) "foreign priority information" are not included in the first paragraph of the Specification.

Concerning "the continuity chain," this phrase is not understood. Moreover, the present application was not filed under 35 U.S.C. § 111(a) and does not include a benefit claim under 35 U.S.C. § 120. Rather, the present application is the national stage of PCT/DE03/00701 filed under 35 U.S.C. § 371. Concerning the inclusion of a reference to the international application number in the first sentence of the Specification, the Examiner's attention is respectfully directed to M.P.E.P. § 1893.03(c), which specifically states that it is not necessary for the Specification of a national stage application to reference the international application number that was used to identify the application during international processing of the application by the international authorities prior to commencement of the national stage.

Concerning "foreign priority information," there is no requirement in the patent statutes or rules for including foreign priority information in the first paragraph of a patent application.

Paragraph 5 of the Office Action is not understood, since the present application does not incorporate any material by reference.

In view of all of the foregoing, withdrawal of this objection is respectfully requested.

III. Rejection of Claims 8 to 21 Under 35 U.S.C. § 103(a)

Claims 8 to 21 were rejected under 35 U.S.C. § 103(a) as unpatentable over the combination of DE 198 38 466 ("Lenfers et al.") and U.S. Patent No. 3,949,551 ("Eichler et al."). It is respectfully submitted that the combination of Lenfers et al. and Eichler et al. does not render unpatentable the present claims for at least the following reasons.

As an initial matter, the statement that U.S. Patent No. 6,301,951 is an "English equivalent" to DE 198 38 466 is not understood. That is, it is entirely unclear whether the present rejection is based on DE 198 38 466 or U.S. Patent No. 6,301,951. To the extent that the present rejection is based on DE 198 38 466, an English language translation of DE 198 38 466 is respectfully requested from the Office as required by M.P.E.P. § 706.02(II) ("If the document is in a language other than English and the examiner seeks to rely on that document, a translation must be obtained so that the record is clear as to the precise facts the examiner is relying upon in support of the rejection" (emphasis added)).

To reject a claim under 35 U.S.C. § 103(a), the Office bears the initial burden of presenting a *prima facie* case of obviousness. *In re Rijckaert*, 9 F.3d 1531, 1532, 28 U.S.P.Q.2d 1955, 1956 (Fed. Cir. 1993). As clearly indicated by the Supreme Court, it is "important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the [prior art] elements" in the manner claimed. *See KSR Int'l Co. v. Teleflex, Inc.*, 127 S. Ct. 1727 (2007). In this regard, the Supreme Court further noted that "rejections on obviousness cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *Id.*, at 1396. Furthermore, there must be a reasonable expectation of success. *In re Merck & Co., Inc.*, 800 F.2d 1091, 231 U.S.P.Q. 375 (Fed. Cir. 1986). Moreover, the prior art reference(s) must teach or suggest all of the claim features. *In re Royka*, 490 F.2d 981, 180 U.S.P.Q. 580 (C.C.P.A. 1974).

Claim 1 relates to a method for operating a broadband lambda sensor for determining an oxygen concentration in the exhaust gas of an internal combustion engine operated with a fuel-air mixture, and recites, *inter alia*, that the method includes, repeatedly reversing the polarity of the pump voltage during at least the lean operation to create a temporary reversal of direction of the pump current, wherein the repeated reversal of polarity of the pump voltage is carried out

at least one of during the duration of a secondary fuel injection in the lean operation of the internal combustion engine and during a warm-up phase of the lambda sensor.

The combination of Lenfers et al. and Eichler et al. does not disclose or suggest these features. Lenfers et al.¹ relates to a method for operating a broadband lambda sensor (10), which after a long period of lean operation of the lambda sensor (10), a switching device (54) causes a pulse-like reversal of pump current, which breaks down a polarization effect at the lambda sensor (10), thus, preventing any inaccuracy in the measurement value. Lenfers et al. states, in column 3, lines 53 to 55, that "it is assumed that the fuel-air mixture with which the internal combustion engine is operated is in a lean range for a long period of time" and in column 4, lines 54 to 56, that "on the whole, the rich drift during long-term lean operation is eliminated by brief, defined rich operation of sensor 10." (emphasis added). Nowhere does Lenfers et al. address repeated reversal of polarity of the pump voltage at least one of during the duration of a secondary fuel injection in the lean operation of the internal combustion engine and during a warm-up phase of the lambda sensor, both of which can occur in relatively short periods of lean operation.

Eichler et al. purports to relate to a method and system to reduce the noxious components in the exhaust gases during the warm-up period of the internal combustion engine. Nowhere does Eichler et al. address a secondary fuel injection in the lean operation of the internal combustion engine. Further, Eichler et al. merely indicates that a warm-up phase occurs during a lean operation, but does not suggest repeated reversal of polarity of the pump voltage during a warm-up phase of the lambda sensor. The combination of Lenfers et al. and Eichler et al. does not disclose or suggest carrying out repeated reversal of polarity of the pump voltage at least one of during the duration of a secondary fuel injection in the lean operation of the internal combustion engine and during a warm-up phase of the lambda sensor.

The Office Action admits that "Lenfers et al fails to teach the engine to be in lean condition during the warm-up phase or during the duration of a secondary fuel injection." (Office Action, p. 4), but contends that "Eichler et al teaches in figure

¹ Citations are to U.S. Patent No. 6,301,951.

2 and in column 2, lines 13-16 for the engine and in turn the sensor to be in the lean phase during warm up.” (Office Action, p. 4). In this regard, the Office Action contends that “it would have been obvious to one possessing ordinary skill in the art at the time the invention was being made to also utilize these pulses during other extended periods of lean operation, such as the during an initial warm-up lean operation like shown by Eichler, so as to prevent the polarization of the electrodes during these other lean operations as well.” (Office Action, p. 5). However, Lenfers et al. refers to reversals which occur during long-term lean operation, while Eichler et al. refers to short-term lean operations, as in, for example, the warm-up phase. Therefore, the modification as proposed by the Office Action, to use Lenfers et al. in combination with Eichler et al. to break down a polarization effect at the lambda sensor through reversal of polarity during short-term lean operation, would have been unpredictable based on the disclosures of the relied upon references, since while Lenfers et al. in combination with Eichler et al. may result in preventing inaccuracies in the measurement value during long term lean operation, there is no indication that inaccuracies in the measurement value due to polarization effect at the lambda sensor during short term lean operation could be prevented. Thus, the suggested modification necessarily relies on improper hindsight reasoning based on Applicants’ disclosure.

For all of the foregoing reasons, the combination of Lenfers et al. and Eichler et al. does not disclose or suggest all of the features of claim 8. As for claims 9 to 21, which ultimately depend from claim 8 and therefore include all of the features included in claim 8, it is respectfully submitted that the combination of Lenfers et al. and Eichler et al. does not render unpatentable these dependent claims for at least the reasons more fully set forth above in support of the patentability of claim 8.

In view of all of the foregoing, withdrawal of this rejection is respectfully requested.

IV. Conclusion

It is therefore respectfully submitted that all of the presently pending claims are allowable. All issues raised by the Examiner having been addressed, an early and favorable action on the merits is earnestly solicited.

Respectfully submitted,

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By: SONG LEE for Gerard Messina
Gerard A. Messina
Reg. No. 35,952

KENYON & KENYON LLP
One Broadway
New York, New York 10004
(212) 425-7200
CUSTOMER NO. 26646